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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/447,472	11/23/1999	JAMES B. ARMSTRONG	533/049	3863

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EXAMINER

LAMBRECHT, CHRISTOPHER M

ART UNIT	PAPER NUMBER
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2611

DATE MAILED: 07/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/447,472

Applicant(s)

ARMSTRONG ET AL.

Examiner

Christopher M. Lambrecht

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 March 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9, 19 and 21-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9, 19 and 21-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 9 March 2005 have been fully considered but they are not persuasive.

In particular, Applicant's submit the following with regard to independent claims 1 and 19:

- a) Nowhere in the combined references is there any teaching or suggestion that the minimally accessed assets are distributed amongst the plurality of servers (p. 8)";
- b) that the proposed combination of the Ueno and Hokanson references fails to solve the problem of distributing video assets in the manner that applicant's invention does (p. 9); and
- c) as such, claims 1 and 19 are not obvious and fully satisfy the requirements of 35 U.S.C. 103 (p. 10).

In response to a), As stated in the previous Office action, Examiner submits that the Ueno reference teaches that of the video assets disclosed, some assets exhibit a high frequency of access, and others exhibit a low frequency of access (col. 18, ll. 21-30). Furthermore, Ueno discloses dividing and selectively distributing video assets among the plurality of servers (col. 18, ll. 21-30). Such selection and distribution of said video assets encompasses both frequently requested (those assets above a predetermined threshold rate) and infrequently requested (those assets below a predetermined threshold rate), since according to the Ueno reference, frequently requested assets and infrequently requested assets are stored in different servers (col. 18, ll. 21-30). As such, Ueno discloses dividing and selectively distributing said video assets below said respective threshold rate amongst said plurality of servers.

Hence, with regard to the newly amended limitations to claims 1 and 19, Ueno only fails to teach migrating the infrequently requested assets (of both the frequently and infrequently requested assets) to a secondary storage partition on each of said plurality of servers. Accordingly, Hokanson is incorporated to teach migrating infrequently requested video assets to a secondary storage partitions on a server (col. 11,

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II. 5-30), for the purpose of matching server resources to consumer demand (col. 11, II. 30-40). In combination with the selection and distribution of infrequently requested video assets taught by Ueno (see above), the teachings of Hokanson result in a system that, among other things, comprises a plurality of servers, each of said servers having a primary and secondary storage partition for storing frequently and infrequently requested video assets, respectively; and, that selects and divides video assets (both frequently requested and infrequently requested) amongst the plurality of servers, wherein infrequently requested video assets are stored on said secondary storage partition. Therefore, among other things, the Ueno and Hokanson references together disclose “dividing and selectively distributing said video assets below said respective threshold rate amongst said secondary partitions of said plurality of servers.”

Furthermore, Applicant’s own assessment of the teachings of the combination of Ueno and Hokanson (Applicant’s remarks, p. 8) meets the claimed limitation. In particular, Applicant admits “...minimally accessed assets are stored in secondary storage devices respectively coupled to each server, as well as designated central server for storing the minimally requested assets.” (emphasis added) Because the “designated central server” comprises one of said plurality of servers, the minimally accessed (infrequently requested) assets are in fact distributed amongst said plurality of servers (i.e., the infrequently requested assets are distributed amongst the secondary storage devices respectively coupled to each server and the central server. Accordingly, the claimed features are met by the teachings of Ueno and Hokanson.

In response to b), Examiner submits that Hokanson discloses “In this manner, the content manager effectively tunes the video resource database to match consumer demand, without imposing undue costs. The cost/availability balance enables the content manager to make frequently requested movies more readily available (i.e., maximum access to the video titles) at the sacrifice of rendering rarely requested movies less readily available (col. 11, lines 30-40).” In addition, Hokanson discloses “This balance takes into consideration the following example of factors: cost of storing content, storage

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capacity, number of subscribers, server capabilities, subscriber viewing patterns, and distribution pipeline (i.e., network cost) (col. 10, lines 64-67).” That is, Hokanson clearly embraces “the problem of allowing maximum access to the video titles with minimum network cost associated with their delivery.”

Therefore, the combination of Ueno and Hokanson does solve the problem in the manner that Applicants’ invention does.

In response to c), Examiner submits that in light of the above remarks, claims 1 and 19 are obvious in view of the prior art and fail to fully satisfy the requirements of 35 U.S.C. 103.

Additional issues raised by Applicant are contingent upon Applicant’s belief that claims 1 and 19 are non-obvious. In view of the above remarks, Examiner submits that claims 1 and 19 are obvious in view of the prior art, and therefore, all issues raised by Applicant have been alleviated.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-6, 19, 22, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ueno (Ueno et al., US006438596B1) in view of Hokanson (US006094680A).

With regard to claim 1, Ueno discloses an interactive information distribution system including a network of provider equipment (core network, 1002) and subscriber equipment (access networks, 1008 & 1009), apparatus comprising: a plurality of servers (1001, 1005, 1006, fig. 10) coupled to respective

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subscriber equipment (STUs, 1010-1013); and a manager (combination of 1003, 1004, 1007; see col. 21, lines 44-51), coupled to each of said plurality of servers; said servers storing frequently requested video assets and infrequently requested video assets (col. 18, ll. 21-30); said infrequently requested video assets being divided and selectively distributed amongst said plurality of servers (col. 18, ll. 23-30). Ueno does not disclose each of said servers having a primary storage partition and each of said servers having a secondary storage partition, said infrequently requested video assets being distributed on said secondary partitions of said plurality of servers; and said manager routes video assets between said servers in response to video asset requests, and migrates video assets between storage partitions in response to a video asset request rate traversing a threshold rate.

Hokanson discloses a server (132) with primary (high performing/high cost storage) and secondary (low performance/low cost) storage partitions (col. 9, lines 55-67); infrequently requested video assets being distributed amongst said secondary partitions of said server (col. 11, ll. 5-30); and a manager (142) for routing data between servers in response to client requests (col. 9, lines 48-54), and migrating data between storage partitions in response to a request rate traversing a threshold rate (a threshold is inherent in the distinction between content requested by a "large number of subscribers" and content that is "rarely" requested; see col. 11, lines 16-30), for the advantage of configuring the server resources to match consumer demand (col. 11, lines 30-40).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Ueno to include servers having a primary storage partition; a secondary storage partition; said infrequently requested video assets being distributed amongst said secondary partitions of said plurality of servers; and a manager for routing data between servers and migrating data between storage partitions in response to client requests, as taught by Hokanson, for the advantage of configuring the server resources to match consumer demand.

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With regard to claim 2, Ueno and Hokanson together disclose the claimed subject matter. In particular, Hokanson discloses said manager allocates said video assets to at least one of said plurality of servers for storage on said primary partition when said asset request rate traverses said threshold rate (a threshold is inherent in the distinction between content requested by a “large number of subscribers” and content that is “rarely” requested; see col. 11, lines 16-30); and said manager stores said video assets on said secondary storage partition when said asset request rate does not traverse said threshold rate (col. 11, lines 16-30).

With regard to claim 3, Ueno and Hokanson together disclose the claimed subject matter. In particular, Ueno discloses in response to an asset request from subscriber equipment (1010), said manager (1003, 1004, 1007) distributes to said requesting subscriber equipment (1010) the requested video asset from a server storing the requested video asset (col. 19, lines 36-44).

With regard to claim 4, Ueno discloses a manager (1003, 1004, 1007) coupled to said plurality of servers (1001, 1005, 1006), said manager comprising: a stream session manager (server resources management control unit, 1003), for distributing streams of video assets to subscriber equipment requesting said video assets (col. 19, lines 49-53); and a content session manager (service control unit, 1007) for receiving asset requests from said stream session manager (col. 18, lines 58-63). Ueno does not disclose said manager comprises a content manager coupled to said plurality of servers for tracking, inventorying and administering said asset request rate and said threshold rate for each of said video assets;

Hokanson discloses a content manager (142) for tracking, inventorying and administering said asset request rate and said threshold rate for each of said video assets (col. 11, lines 9-23), for the advantage of configuring the server resources to match consumer demand (col. 11, lines 30-40).

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It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Ueno to include a content manager for tracking, inventorying and administering said asset request rate and said threshold rate, as taught by Hokanson, for the advantage of configuring the server resources to match consumer demands.

With regard to claim 5, Ueno and Hokanson together disclose the claimed subject matter. In particular, Ueno discloses an inter-server network (1002), coupled between each of said plurality of servers, for transmitting and receiving said video assets; and an access network (1008, 1009), coupled between each of said plurality of servers and said respective subscriber equipment, for receiving asset requests and transmitting video assets.

With regard to claim 6, Ueno and Hokanson together disclose the claimed subject matter. In particular, Ueno discloses an apparatus and corresponding method comprising: a server, identified by a manager (server resources management control unit, 1003) as storing a requested video asset, provides said requested video asset to requesting subscriber equipment via said access network (col. 19, lines 48-53).

With regard to claim 19, Ueno discloses in an interactive information distribution system comprising: a plurality of servers (1001, 1005, 1006) coupled to respective subscriber equipment (STUs, 1010-1013), said servers providing video assets to respective subscriber equipment in response to subscriber requests and a manager (combination of 1003, 1004, 1007; see col. 21, lines 44-51); and dividing and selectively distributing said infrequently requested video assets amongst said plurality of video servers (18, ll. 23-30). Ueno does not disclose each of said servers having a primary storage partition for storing a local portion of video assets, each of said servers having a secondary storage

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partition for storing at least some of a remaining portion of said video assets, determining an asset request rate for each of said video assets in the server; comparing said determined asset request rate with respective threshold rates, and in the case of video assets stored on a secondary partition having a request rate exceeding said respective threshold rate, migrating said video assets stored on said secondary partition to a corresponding primary partition; wherein in the case of said determined asset request rate for video assets stored in said primary partition being below a respective threshold rate, migrating said video assets from said primary partition to a corresponding secondary partition; and distributing said video assets below said respective threshold rate on said secondary partitions of said plurality of video servers.

Hokanson discloses an apparatus and corresponding method comprising: a server (132) with primary (high performing/high cost storage) and secondary (low performance/low cost) storage partitions (col. 9, lines 55-67) and a manager (142) for routing data between servers in response to client requests (col. 9, lines 48-54), and migrating data between storage partitions in response to a request rate traversing a threshold rate (a threshold is inherent in the distinction between content requested by a “large number of subscribers” and content that is “rarely” requested; see col. 11, lines 16-30); said method including the steps of determining an asset request rate for each of said video assets in the server (col. 11, lines 9-10); comparing said determined asset request rate with respective threshold rates (col. 11, lines 16-20), and in the case of video assets stored on a secondary partition having a request rate exceeding said respective threshold rate, migrating said video assets stored on said secondary partition to a corresponding primary partition (col. 11, lines 20-30); wherein in the case of said determined asset request rate for video assets stored in said primary partition being below a respective threshold rate, migrating said video assets from said primary partition to a corresponding secondary partition (col. 11, ll. 5-30), for the advantage of configuring the server resources to match consumer demand (col. 11, lines 30-40).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Ueno to include servers having a primary storage partition, a secondary storage

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partition, and a manager for routing data between servers and migrating data between storage partitions in response to client requests; and, to divide and selectively distribute said video assets below said respective threshold rate amongst said secondary partitions of said plurality of video servers, as taught by Hokanson, for the advantage of configuring the server resources to match consumer demand.

With regard to claim 22, Ueno and Hokanson together disclose the claimed subject matter. In particular, Ueno discloses an apparatus and corresponding method comprising: a server, identified by a manager (server resources management control unit, 1003) as storing a requested video asset, provides said requested video asset to requesting subscriber equipment via said access network (col. 19, lines 48-53).

With regard to claim 23, Ueno and Hokanson together disclose the claimed subject matter. In particular, Ueno discloses said identified server is coupled directly to said requesting subscriber equipment (via channel 1019, col. 19, lines 48-53).

4. Claims 7-9 & 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ueno and Hokanson as applied to claims 6 & 23 above, and further in view of Kikinis (US006163795A).

With regard to claims 7 and 24, Ueno and Hokanson together do not disclose said requested video asset is provided to said access network via an intervening server.

Kikinis discloses an apparatus and corresponding method providing a requested video asset (stored on a remote file server, e.g., 3, 5, or 7) to an access network (41, 43, & 45) via an intervening server (file server 1, is an intervening server in such cases where it resides between the source of a

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requested video asset, e.g., remote file server 3, 5, or 7, and the access network 41, 43 & 45 of the requesting subscriber), for the advantage of providing user access to a video asset not stored in the server for the access network of the requesting subscriber (file server 1) (col. 4, lines 16-32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Ueno and Hokanson to include a providing a requested video asset to said access network via an intervening server, as taught by Kikinis, for the advantage of providing user access to a video asset not stored in said user's local server.

With regard to claim 8, Ueno and Hokanson together disclose the claimed subject matter. In particular, Ueno discloses said stream session manager (1003) causes transmission of said video assets across said access network (1008, 1009) to said subscriber equipment (col. 19, lines 48-53).

With regard to claim 9, Ueno discloses a plurality of servers (1001, 1005, 1006) correspondingly linked to said subscriber equipment. Ueno does not disclose said video asset is stored on said primary partition or secondary partition.

Hokanson discloses said video asset is stored on said primary storage partition or secondary storage partition (col. 10, lines 35-45), for the advantage of configuring the server to match consumer demands (col. 11, lines 30-40).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Ueno to include said video assets stored on said primary storage partition or secondary storage partition, as taught by Hokanson, for the advantage of configuring the server to match consumer demands.

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5. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ueno and Hokanson as applied to claim 19 above, and further in view of Kenner (Kenner et al., US006269394B1).

With regard to claim 21, Hokanson discloses storing duplicates of said video assets on said primary storage partition (col. 10, lines 1-8). Ueno and Hokanson together do not disclose removing duplicates of said video assets.

Kenner discloses removing duplicate data from a storage partition (col. 12, lines 35-40), for the advantage of maximizing available storage capacity.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Ueno and Hokanson to include removing said video assets from each of said primary storage partitions, as taught by Kenner, for the advantage of maximizing available storage capacity.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

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7. The following are suggested formats for either a Certificate of Mailing or Certificate of Transmission under 37 CFR 1.8(a). The certification may be included with all correspondence concerning this application or proceeding to establish a date of mailing or transmission under 37 CFR 1.8(a). Proper use of this procedure will result in such communication being considered as timely if the established date is within the required period for reply. The Certificate should be signed by the individual actually depositing or transmitting the correspondence or by an individual who, upon information and belief, expects the correspondence to be mailed or transmitted in the normal course of business by another no later than the date indicated.

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Please refer to 37 CFR 1.6(d) and 1.8(a)(2) for filing limitations concerning facsimile transmissions and mailing, respectively.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher M. Lambrecht whose telephone number is (571) 272-7297. The examiner can normally be reached on 9:30 AM - 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the primary examiner, Christopher Grant can be reached on (571) 272-7294. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Christopher M Lambrecht
Examiner
Art Unit 2611

CML


HAI TRAN
PRIMARY EXAMINER

